MOTREC

G-448HD

OPERATOR AND MAINTENANCE MANUAL
SPARE PARTS LISTS INCLUDED

SERIAL NUMBER : 1037388 & UP

Printed in Canada

One Year Limited Warranty

Effective April 25, 2005, MOTREC, Inc. (MOTREC) hereby warrants to the Original Retail Purchaser (Owner) that any of its vehicles shall be free from any defect in materials for a period of 90 DAYS while in the possession of such Original Retail Purchaser. This warranty IS NOT TRANSFERABLE to any subsequent Buyer.

The warranty period is extended to one year or one thousand (1,000) hours, which ever first occurs, on the electric motor, differential (parts that bathe in oil) and the electronic speed controller. MOTREC makes no warranty or representation with respect to the internal combustion engine, tires and batteries, since their respective manufacturers cover such parts. Accessories (light, gage, horn, etc), electrical contacts (switch, solenoid, contactor, relay), diodes & fuses, belts & pulleys, filters & spark plugs, lubricants, brake linings & shoes, brake drums & discs, seals, seats, trim and other items subject to wear are not included in this warranty; nor is any item that in MOTREC sole opinion, shows evidence of neglect, misuse, abuse, collision or alteration.

This warranty shall not apply to normal maintenance requirements as described in the User Manual, and to damages during shipment. The latter is the carrier's responsibility. No compensation will be allowed for delays.

To initiate warranty coverage on any MOTREC vehicle, the Dealer must complete and return the “Sales/Installation Report” to MOTREC within 30 days after delivery to the Original Retail Purchaser; or within 90 days after the delivery date to the Dealer, which ever occurs first. Failure to follow these procedures will result in considering the warranty coverage effective as of the shipment date from the factory.

The defective vehicle must be returned, at the Owner's expense, to an authorised MOTREC Dealer within 30 days after failure. The Owner will not be charged for parts and labour required for warranty repairs, which must be performed by an authorised MOTREC Dealer only. The vehicle will be returned at the owner’s expense. The Warranty Claim Forms must be completed and returned with the defective part(s) to MOTREC within 30 days after repair was done. No compensation will be allowed for damages caused by vehicle downtime.

It is the responsibility of the owner of the vehicle to make sure that the driver is properly trained and instructed in the safety features and operation of the vehicle, including vehicle stability, as required by OSHA and ANSI-B56. Operators shall read, understand and follow the safety and operating instructions in MOTREC Manual before driving the vehicle. Operators shall not be permitted to drive the vehicle unless a complete and adequate training has been provided. Driving a vehicle constitutes a hazard. The driver is responsible for the control of the vehicle while driving and must always evaluate and care for all peculiar situations that he or she may meet while driving. The driver assumes the inherent hazards related to this activity. The vehicle is designed for off-road use only. MOTREC disclaims any liability for incidental or consequential damages, to include, but not be limited to, personal injury or property damage arising from vehicle misuse, lack of maintenance or any defect in the vehicle.

It is the responsibility of the Owner of the vehicle to make sure that the service technicians are properly trained as required by OSHA and ANSI-B56. Service technicians shall read, understand and follow instructions in the MOTREC manual before servicing the vehicle. Only qualified and authorized personnel shall be permitted to maintain, repair, adjust and inspect the vehicle.

MOTREC prohibits, and disclaims responsibility for, any vehicle modification altering the weight distribution and stability, increasing the speed or affecting the safety of the vehicle. Such modifications can cause serious personal injury or property damage for which MOTREC disclaims any responsibility.

For Owners that are located outside North America, the warranty period starts the date of shipment from the factory, and the defective parts must be returned at the Owner's expense to MOTREC prior to warranty repair.

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INSTRUCTIONS

SAFETY WARNINGS FOR OPERATORS

FAILURE TO OBEY THE FOLLOWING SAFETY RULES MAY RESULT IN SEVERE INJURY.

It is the responsibility of the owner of this vehicle to train operators to ensure that they understand the operating characteristics of this vehicle, including training in vehicle stability, and obey the following safety rules and guidelines. Owner shall comply with OSHA and ANSI/ITSDF B56.8 & B56.9 Standards for vehicle use, safety rules, operator training and certification. Do not drive this vehicle unless you are a certified operator.

- Do not drive this vehicle under the influence of drugs or alcohol.
- Do not drive this vehicle on public roads and highways. This vehicle is designed to be driven in buildings.
- This vehicle can make sparks which can ignite inflammable materials. Never use the vehicle in hazardous areas where there are inflammable materials, explosive dust or fumes in the air.
- Never run the engine in a confined area and avoid inhaling engine poisonous fumes which contain CO.
- Have your vehicle inspected regularly by trained personnel, and cease operation if a malfunction occurs.
- Do not open motor compartment. Keep clear from moving, rotating(wheels, sheaves, etc) or lifting parts.
- Keep clear from hot parts of exhaust system.
- Never carry more passengers than number allowed for this vehicle. Wait until all occupants are seated and holding on before moving. Always keep all body parts inside vehicle. Keep both hands on steering wheel.
- Do not exceed the vehicle cargo load capacity and gross trailing weight capacity, rated for flat hard even surface. Different operating conditions such as loose terrain or ramps reduce vehicle capacity.
- Avoid loose, unbalanced or top-heavy loads to keep a good stability and prevent overturn. Do not load cargo that can fall off the vehicle. Do not carry cargo that is longer, wider or higher than this vehicle.
- Always depress slowly the accelerator for smooth acceleration. Avoid stunt driving or horseplay.
- Avoid sharp turns, always slow down before turning, to prevent vehicle overturn or trailer jack knife. Vehicle is more sensitive to overturn and jack knife when traveling on inclines or when carrying a heavy load.
- Always drive straight up and down the face of an incline, never across the face, to prevent overturn and trailer jack knife. Drive slower and start applying brakes sooner on inclines to adjust for longer stopping distance.
- Use extra care and drive slowly in reverse, in congested areas or on wet or slippery ground.
- Keep to the right under normal conditions. Maintain a safe distance from all objects.
- Slow down and sound the horn when approaching a corner or other blind intersections.
- Before leaving the vehicle, park on level ground flat surface, turn off all switches, set forward/reverse selector to neutral, set parking brake, remove the key. Do not park the vehicle on an incline.
- Use another driver to steer this vehicle while it is towed. Be sure the driver uses brakes when you slow or stop the towing vehicle. Do not exceed 5 MPH or carry any passenger while towing this vehicle.

VEHICLE CONTROLS (HYDROSTATIC KUBOTA – G-448HD)

It is the responsibility of the owner of this vehicle to ensure that the operator understands the operating characteristics of this vehicle, and obeys the safety instructions in this manual and ANSI/ITSDF B56.8 & 9 Standards. Do not drive this vehicle unless you are a certified operator as required by OSHA.

Fuel Tank

The fuel tank is located on the right at the rear. Do not remove the fuel cap while the engine is running. Do not fill the fuel tank to point of overflowing. Use clean, fresh, lead-free gasoline intended for automotive use. A minimum of 85 octane is recommended. Do not mix oil with gasoline.

Engine Oil

Never open engine compartment while engine is running. Before checking engine oil, stop engine. Avoid touching hot engine, muffler and exhaust parts.

Hydraulic oil tank

The hydraulic oil tank is located on the left at the rear. Do not remove the oil cap while the engine is running. Do not fill the oil tank to point of overflowing. Use hydraulic oil meeting ISO VG-46

Oil sentry

When the red light on the instrument panel turns on, the engine oil pressure is too low, or engine temperature is to high. Therefore, the engine must be serviced to avoid serious damage.

Horn button

The horn button is located on the steering column.

Park brake lever

To actuate the parking brake, depress the brake pedal and pull up the hand lever located between the front seats. Never park on an incline. Always set the parking brake before leaving the vehicle.

Accelerator and brake pedals

The accelerator and brake pedals operate the same way as the pedals of an automobile. Depress the accelerator pedal with the right foot to speed the vehicle up and release it to slow down. Depress the brake pedal with the right foot to reduce the vehicle speed.

Forward/Reverse Selector

Shift only when the vehicle is not moving and engine is at idle speed. Before leaving the vehicle, set the FWD/REV selector to NEUTRAL and set the parking brake.

Manual Choke

GAS ENGINE: before starting a cold engine, pull out the choke knob and depress the accelerator pedal halfway to the floor; as the engine warms up, push the knob in until the engine responds properly.
LPG ENGINE: before starting the engine, pull out the choke and depress the accelerator pedal halfway to the floor; while starting, after two seconds, push the knob halfway; as the engine warms up, push the knob in until the engine responds properly.

Key switch / starter

Before starting set the FWD/REV shifter to NEUTRAL, set parking brake, check for visible damage, check brake pedal. To avoid starter damage do not crank the engine continuously for more than 10 seconds at a time;

wait 60 seconds before attempting to start again. Before moving check safety devices: reverse alarm, strobe light, motion beeper and all other safety devices. Before leaving vehicle, set FWD/REV shifter to NEUTRAL, set parking brake, remove key.

MAINTENANCE

SAFETY WARNINGS FOR SERVICE TECHNICIANS

FAILURE TO OBEY THE FOLLOWING SAFETY RULES MAIN RESULT IN SEVERE INJURY.

Owner shall comply with OSHA and ASME/ANSI B56.8 & B56.9 regulations for vehicle maintenance.

Only qualified and authorized personnel shall be permitted to maintain, repair, adjust and inspect carriers, vehicles, tractors, and batteries.

Maintenance operations must be made by properly trained service technicians.

Before any maintenance work, park the vehicle on a flat level surface, set the shift lever to park, turn off all the switches, remove the key, lift the wheels off the ground and secure with jack stands of adequate capacity.

Keep clear from moving parts such as tires, sheaves, drive shaft and engine.

Keep clear from hot parts of exhaust system.

Avoid increasing engine RPM and vehicle speed to prevent accident and severe injuries.

Follow the maintenance instructions applicable to the type of repair, maintenance, or service.

Always wear a face shield and gloves when working around batteries. Use insulated tools to avoid sparks that can cause battery explosion and acid splashing. Use two counteracting tools, double-wrench technique, when disconnecting or tightening terminals on the battery to avoid damaging battery posts.

Keep cables and wires clear from mechanical and rubbing action. Make sure cable covering is free from cutting or visible damage.

Before replacing a fuse or circuit breaker, identify the cause of failure and repair.

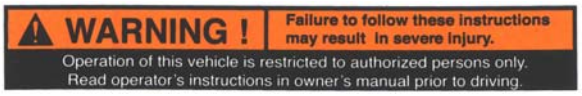
Always ensure the integrity of the warning labels. If they suffered damage and are not readable, replace them promptly. The following images depict the dashboard and general security warning labels:

DECALS AND LABELS

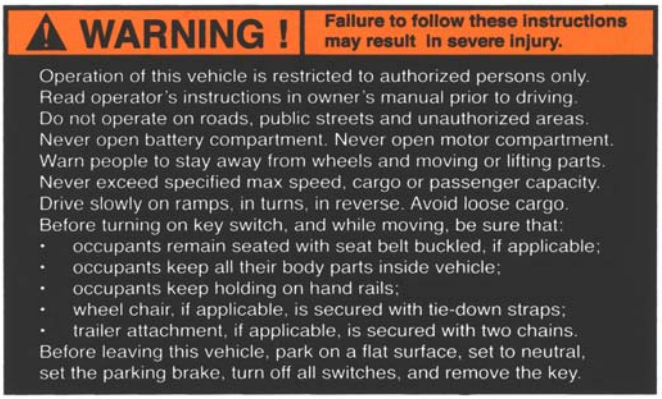
! CAUTION !

The images included in this section depict the decals/markings installed on the vehicle. It is of the utmost importance that theses decals/markings remain unaltered and readable. Else, the sticker or the part baring the marking has to be replaced.

Dashboard security warning label:
5100000002


WARNING !
Failure to follow these instructions may result in severe injury.
Operation of this vehicle is restricted to authorized persons only.
Read operator's instructions in owner's manual prior to driving.

General security warning label:
5100000001

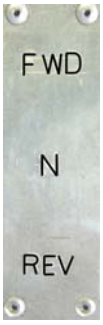

WARNING !
Failure to follow these instructions may result in severe injury.
Operation of this vehicle is restricted to authorized persons only.
Read operator's instructions in owner's manual prior to driving.
Do not operate on roads, public streets and unauthorized areas.
Never open battery compartment. Never open motor compartment.
Warn people to stay away from wheels and moving or lifting parts.
Never exceed specified max speed, cargo or passenger capacity.
Drive slowly on ramps, in turns, in reverse. Avoid loose cargo.
Before turning on key switch, and while moving, be sure that:
• occupants remain seated with seat belt buckled, if applicable;
• occupants keep all their body parts inside vehicle;
• occupants keep holding on hand rails;
• wheel chair, if applicable, is secured with tie-down straps;
• trailer attachment, if applicable, is secured with two chains.
Before leaving this vehicle, park on a flat surface, set to neutral, set the parking brake, turn off all switches, and remove the key.

When an emergency push button is installed, this label is required (located under push button): # 3109800006

When a disconnect handle is installed, this label is required (located in front of handle):
4800012J

Respectively, key switch markings, forward/reverse selector markings and light switch marking:

266211



2819321003

1269004

PREVENTIVE MAINTENANCE SCHEDULE - MOTREC I.C. UNITS

! WARNING ! Read safety instructions before maintenance operations to avoid severe injury.
! WARNING ! Maintenance operations must be made by properly trained service technicians. Follow OSHA and ANSI B56 regulations.

Change engine oil after first 8 hours of use. S/N: _____ Hour Meter reading: _____

	ESTIMATED TIME (MINUTES)					
PERIOD **DESCRIPTION**	**SHIFT START**	**100H**	**200 H**	**1000 H**	**YEAR**	**CHECK**
Stop engine, check engine oil level.	**3**					
Check vehicle for visual damage	**2**					
Examine floor around and beneath unit for signs of transmission oil, differential oil, brake fluid leaks.	**2**					
Turn steering, check for hard steering, excessive free play, or unusual sound when turning.	**1**					
Check accelerator for free & smooth movement.	**2**					
Shift in neutral, before starting engine.	**1**					
Check reverse alarm, horn, strobe light.	**2**					
Check brake pedal travel and parking brake for secure hold. Start slowly and check service brake.	**2**					
Check tire pressure, see pressure rating on tire		**5**				
Check transmission & hydraulic oil level, if appl.		**5**				
Check radiator coolant level, if applicable.		**2**				
Check master cylinder fluid level (DOT 3)		**2**				
Check brake pedal travel		**1**				
Turn front wheels straight, check steering play		**1**				
Check parking brake, requires 10 lbs. force to apply		**1**				
Check brake lines and drive for leaks		**5**				
Check fuel pipe, hose, clamps for damage & leaks		**5**				
Check radiator fan belt, CVT belt, if applicable		**3**				
Service air filter, check intake pipe & clamps		**5**				
Check muffler, exhaust pipe, clamps, spark arrester		**5**				
Air cooled engines only, **change engine oil**		**20(X)**				
Water-cooled engines only, **change engine oil**			**X(20)**			
WARNING LABELS & MARKINGS			**2**			
Inspect wheel bearings and king pins for play			**8**			
Inspect steering suspension linkages & frame.			**10**			
Check pedal & master cylinder linkages for wear			**10**			
Check service brake linings and linkages for wear			**15**			
Check Spark Plugs			**20**			
Change Oil Filter			**20**			
Change air filter			**10**			
Clean radiators and engine shrouds			**20**			
Lubricate the vehicle			**5**			
Service fuel filter, LP vaporizer & regulator				**20**		
Check engine valve clearance & seats				**40**		
Check ignition wires, tighten all nuts and bolts				**20**		
Change differential oil, transmission oil & filter				**20**		
Clean & repack front hubs				**20**		
Flush/change brake fluid					**30**	
Flush/change radiator coolant, if applicable					**30**	
TOTAL TIME (MINUTES)	**15**	**60**	**120**	**120**	**60**	

OIL GRADE CHART

Vehicle system	Oil grade	Note
KOHLER engine		
Above +32°F	10W-30	
Below +32°F	5W-30	
KUBOTA engine		
Above 77°F	30 or 10W-30 or 10W-40	
+32°F to 77°F	20 or 10W-30 or 10W-40	
Below +32°F	10W or 10W-30 or 10W-40	
Hydrostatic transmission	ISO VG46	
Brakes	DOT 3	DMVSS116 standard

HYDRAULIC & PARKING BRAKES

Revision 2008-02-06

DRUM BRAKES

Remove brake drums and check lining wear. Replace shoes and springs if the lining thickness is 1/16" (2mm) or less. Turn the brake adjustment to reduce the clearance between lining and drum. Wheels must turn free when the pedal is released.

DISC BRAKES

Check pad linings. Replace pads if lining thickness is 1/16" (2 mm) or less.

PARKING BRAKE

Replace cables and stoppers if cable play exceeds 1/8” (4mm).
Wheels and/or differential pinion must turn freely when the parking brake is released.
On pinion brake, use spacers at pad fixed ends to reduce space between pads and pulley to 1mm.
To install new cables and stoppers:
-insert the new cable through the hand lever end;
-pull the cable out from the brake assembly end;
-insert the stopper on the cable and leave a maximum play of 1mm;
-for a two-cable system, make sure that cable length is the same at hand lever end;
-tighten ¼-ncx3/4 grade-5 bolt in stopper at 8 LbFt (11NM) torque;
-cable must extend 1.5” (4cm) out of the cable stopper, cut cable excess.

Once cable play has been checked and/or adjusted, turn the knob on the brake lever until a force of 75 Lbs or 34 kg is required on the handle to set the parking brake.

BRAKE PEDAL

If the brake pedal becomes soft or spongy, air may have entered the hydraulic system and the brake system has to be bled:

1. fill the master cylinder with brake fluid (DOT-3);
2. bleed front callipers one at a time by having someone applying a steady pressure on the brake pedal, and close the bleeder before allowing the brake pedal to return to up position;
3. fill the master cylinder with brake fluid (DOT-3);
4. bleed rear wheel brakes one at a time, following the same procedure;
5. fill the master cylinder with brake fluid (DOT-3);
6. clean every fitting and line, remove traces of oil;
7. apply a continuous pressure on the brake pedal for about five minutes ;
8. Finally, inspect brake lines and fittings for leaks ;

FRONT AXLE AND STEERING

! CAUTION !

Before maintenance, turn off all switches, set to neutral, set parking brake, remove the key, and raise the front end of the vehicle supporting it with two jack stands of adequate capacity

STEERING INSPECTION

- Check tire inflation pressure, suspension components, tie rods straightness, tie rod ends play (wear), play (wear) in wheel bearings, kingpins and bushings.

REPLACING & ADJUSTING THE STEERING GEAR

- Remove the pitman arm;
- The steering box makes 6.5 turns, center the steering gear (3.25 turns from either side);
- Align the front wheel straight. Install the pitman arm.

TOE-IN ADJUSTEMENT

- With the wheels in straight forward direction, measure the inside (left to right) distance between the front tires, at the front and rear of the tires;
- Turn the rear tie rod until the distances are equal and tighten the two lock nuts on the tie rod.

REMOVING & GREASING OF FRONT HUBS, required once-a-year

- Remove dust cap and cutter pin, unscrew nut, remove hub;
- Inspect bearings and races for wear and replace worn bearings;
- Replace the seal;
- Pack the hub with wheel bearing grease and re-assemble.

ADJUSTING FRONT HUBS

- Tighten spindle nut to 30 ft-lb to seat the bearing and back off the nut to the next slot;
- Install a new cutter pin and the dust cap.

HYDROSTATIC PUMP – PORTS AND ADJUSTING SCREWS

1	MACHINE RPM START-UP ADJUSTING SCREW Turn CW to increase RPM
2	POWER LIMITER ADJUSTING SCREW Turn CW to increase power
3	MINIMUM CHARGE PRESSURE ADJUSTING SCREW Turn CW to increase pressure
4	CHARGE PRESSURE ADJUSTING SCREW Turn CW to increase pressure
P1	CHARGE PRESSURE INTAKE
M1	HIGH PRESSURE SIDE A
M2	HIGH PRESSURE SIDE B

SPARE PARTS

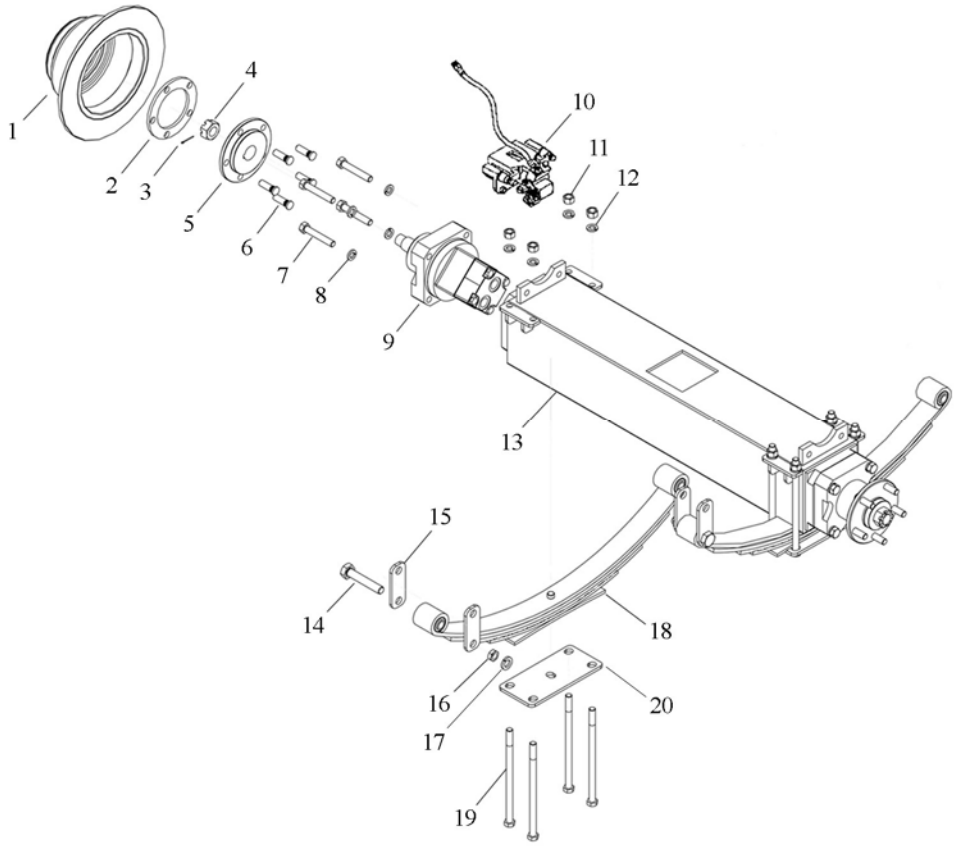
BODY, CAB, SEATS, TIRE

REF	*DESCRIPTION*	*PART #*	*REF*	*DESCRIPTION*	*PART #*
1	BUCKET SEAT ON	1005003		CATCH	3602024
	SLIDE ADJUSTERS			HANDLE	2366320001
2	LEFT ENGINE COVER	*		OPENING HANDLE	2366320003
	RIGHT ENGINE COVER	*		OPENING BAR	2366320004
	LPG TANK HOLDER	2391501001		RIGHT HINGES	2365000001
3	5-B, 18” OD, LUG, SOLID WHEEL	2223360001		LEFT HINGES	2365000002
4	FRONT BUMPER	2314320001		REAR VIEW MIRROR	480039
5	MOTOR COMP. GRID	2819449001		SIDE MIRROR	480040
6	STEEL CAB AND DOORS[1]	2360321002		MIRROR BRACKET FIXE	2399300014
	STEEL CAB[1]	2360320001		MIRROR BRACKET FOLDING	2399300009
	RIGHT DOOR	2360320014		WIPER KIT	366211K
	LEFT DOOR	2360320015		WIPER MOTOR 12V	3113000001
	DOOR GLASS LEFT	2367320001		ARM	2800000001
	DOOR GLASS RIGHT	2367320002		WIPER	2800000002
	PADDLE LATCH	2803000003			

* Contact manufacturer

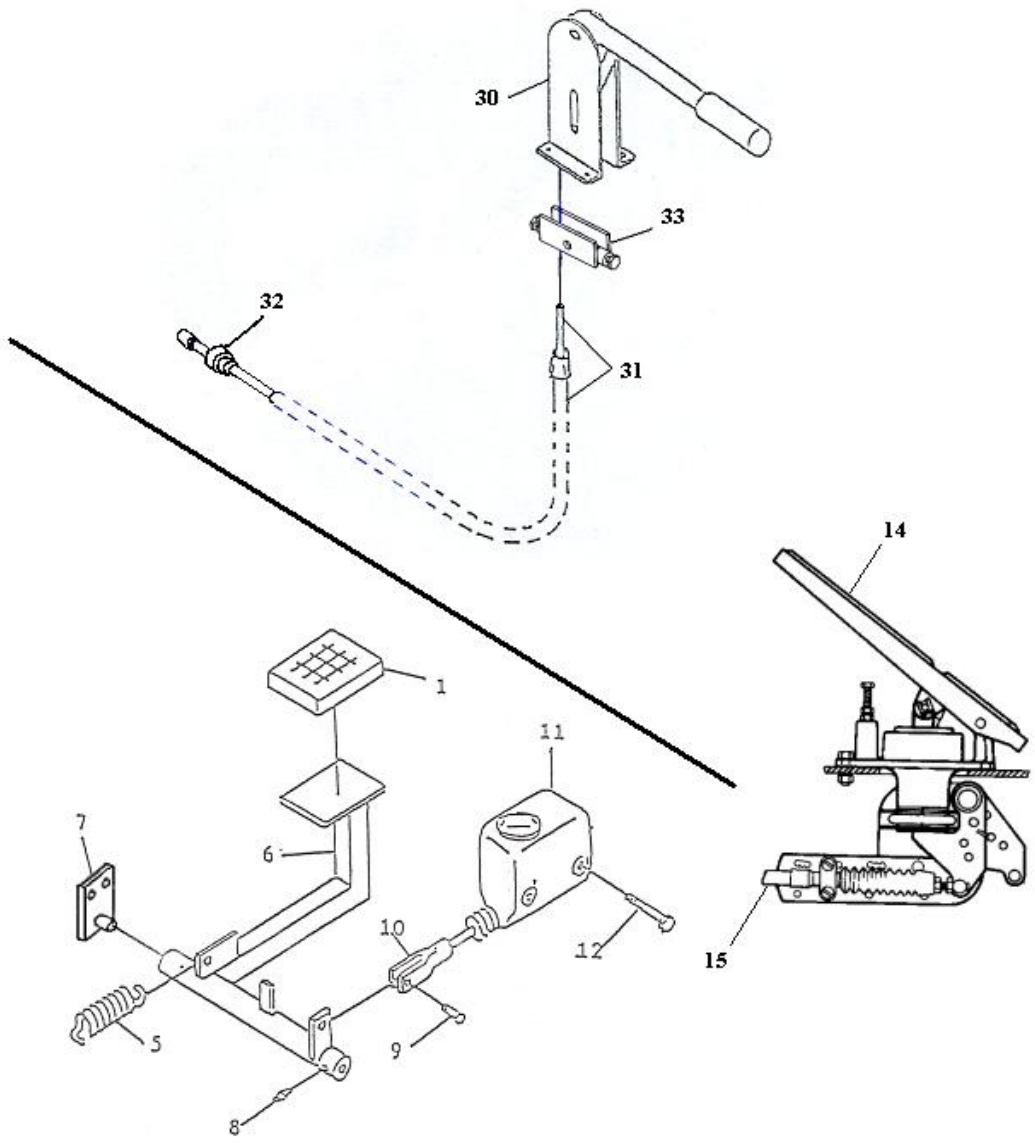
[1] With A/C, see addendum

HYDROSTATIC DRIVE, REAR AXLE AND SUSPENSION



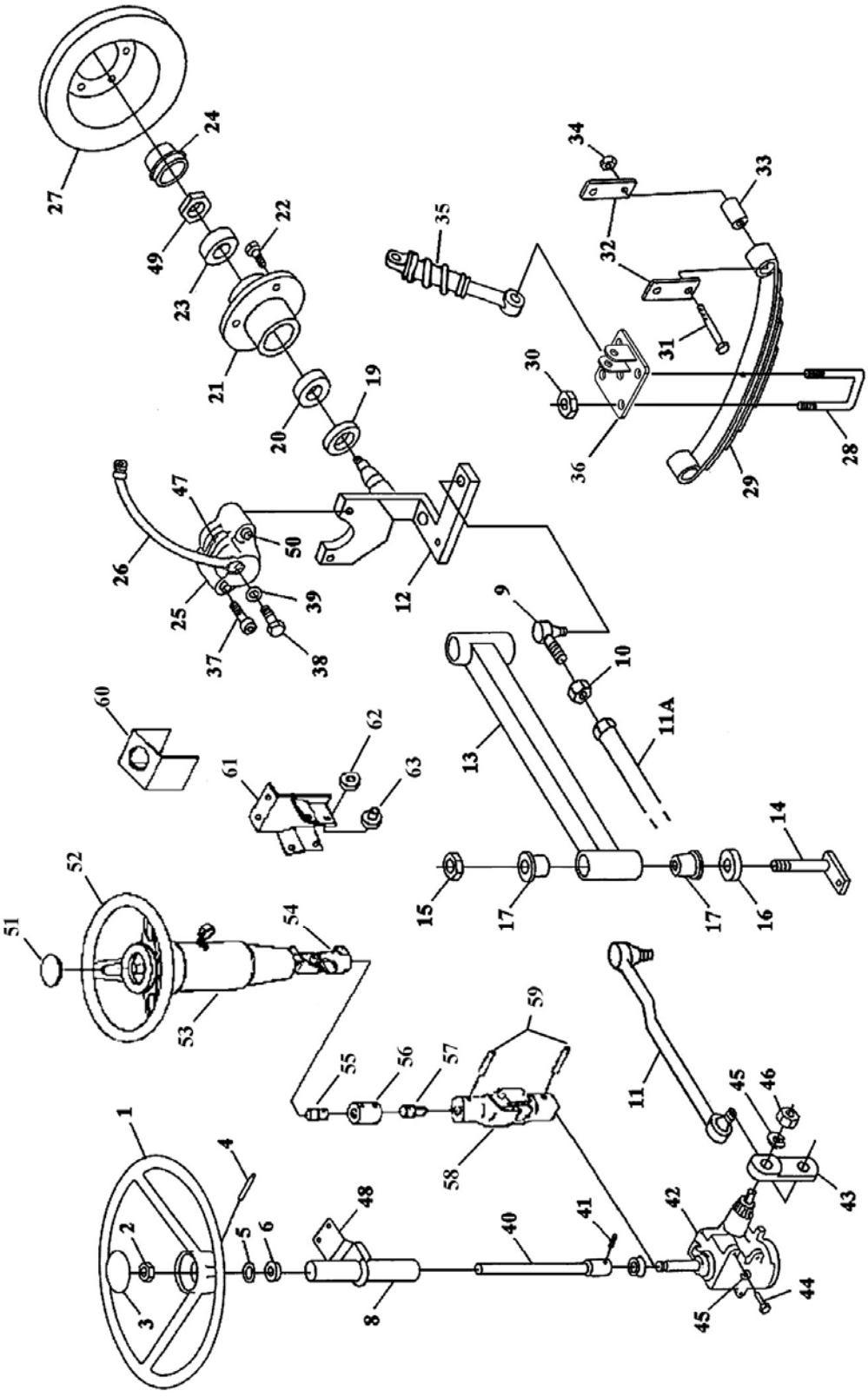
REF.	*PART NO*	*DESCRIPTION*
1	481433	DISC
2	5007001	SPACER
3		COTTERPIN
4	2910322001	CASTELLATED HUB NUT
5	2224322001	HUB
6	2820007	STUD ½ NF X 1 3/4
7		BOLT ½ NF X 2 ½
8		LOCK WASHER ½
9	CALL FACT.	HYDRAULIC MOTOR
10	5016002	RIGHT CALIPER
	5016003	LEFT CALIPER
	5016004	L/R PAD SET
11		NUT ½ NF
12		LOCKWASHER ½
13	2177322006	48” HOUSING
14		BOLT 5/8-NC X 3 ½
15	362606	SHACKLE LINK
16		NUT 5/8-NC
17		LOCKWASHER
18	5040003	LEAF SPRING
19		BOLT ½ NF X 9 ½
20	2185322001	MOUNTING PLATE

BRAKE CONTROLS



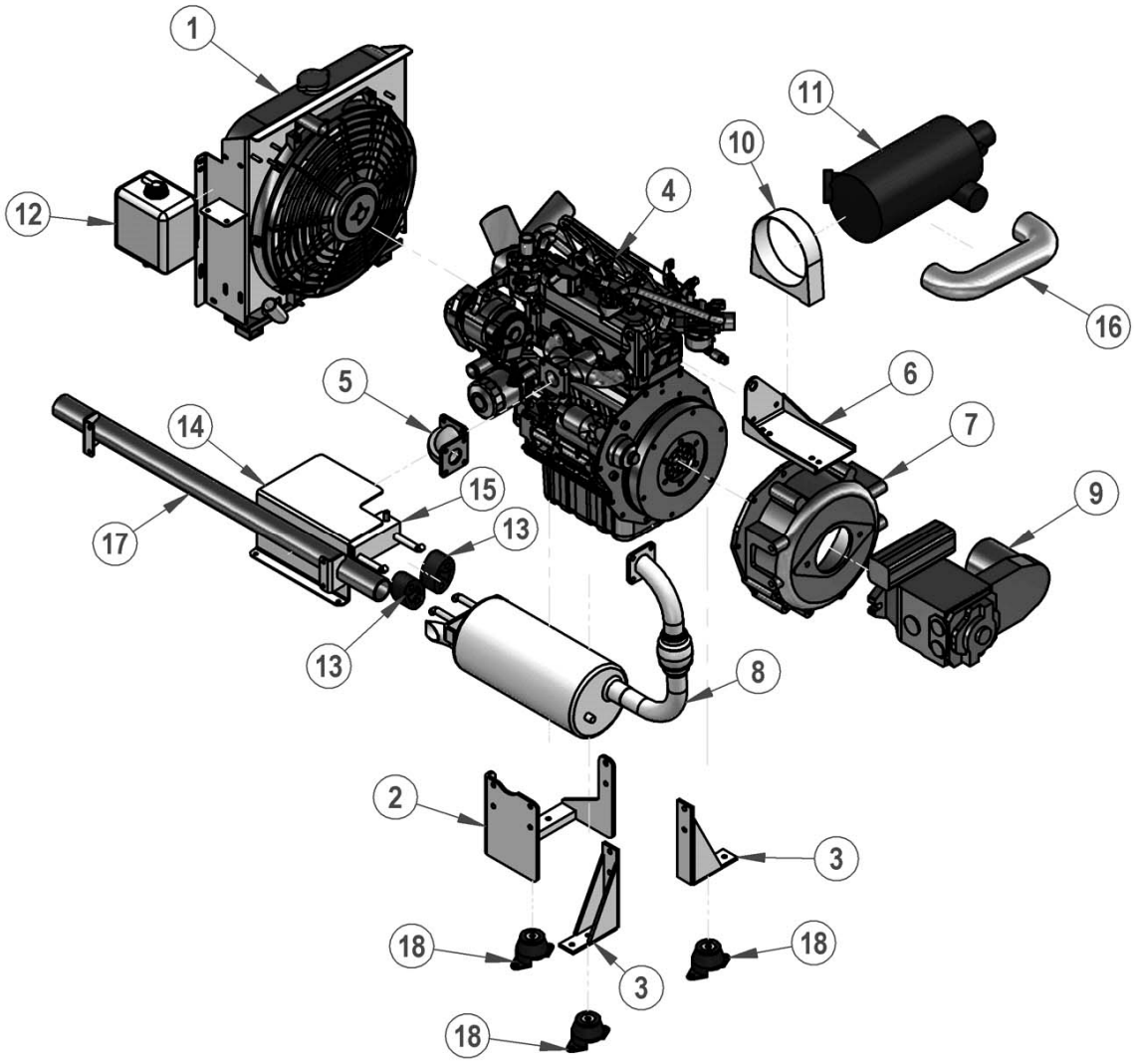
REF	*PART NO*	*DESCRIPTION*	*QTY*	*REF*	*PART NO*	*DESCRIPTION*	*QTY*
1	242800	RUBBER	1	14	6685001	ACCELERATOR PEDAL	1
5	242816	SPRING	1	15	CALL FACT.	ACCELERATOR CABLE	1
6	2131501001	LEVER	1				
7	262807	PIVOT	2	30	3616013	8 in. HANDBRAKE LEVER	1
8	242817	LUBRICATING FITTING	1	31	2129000003	CABLE	2
9		CLEVIS PIN 3/8 X 1	1	32	5016001	CABLE STOP	2
10	122813	YOKE	1	33	2130330001	CABLE RETAINER	2
11	362805	MASTER CYLINDER	1				
12		BOLT 3/8-NC X 3	2				

FRONT AXLE, SUSPENSION, STEERING, DISC BRAKES



REF	*PART NO*	*DESCRIPTION*		*REF*	*PART NO*	*DESCRIPTION*
1	2208240001	STEERING WHEEL		**31**		BOLT 5/8-NC
2	2910000022	NUT 3/4-16		**32**	2182320001	SHACKLE LINK
3	2208240002	COVER		**33**	2183240002	BUSHING
4	2910000023	PIN		**34**		NUT 5/8-NC
5	2104300004	OIL SEAL		**35**	2180240001	SHOCK ABSORBER
6	2100300002	BUSHING		**36**	2184448001	PLATE
7	2100300003	BUSHING		**37**	2910000017	BOLT, LONG
8	2200300002	TUBE			2910000018	BOLT, SHORT
9	2207000001	ROD END, LEFT HAND		**38**	2139000003	BOLT
	2207000002	ROD END, RIGHT HAND		**39**	2139000002	WASHER
10	2910000005	NUT, LEFT HAND		**40**	2200300003	SHAFT
	2910000006	NUT, RIGHT HAND		**41**	2910000024	SCREW
11	2207320001	FRONT TIE ROD		**42**	2117250001	GEAR
11A	2207300006	TIE ROD			4430002	GEAR FOR TILT/TEL. STEERING
12	2201360002	RIGHT AXLE		**43**	2207320009	ARM
	2201662002	RIGHT AXLE , P. STEERING		**44**		BOLT 7/16-NC
	2201360001	LEFT AXLE		**45**	2910000020	LOCK WASHER
	2201662003	LEFT AXLE, P. STEERING		**46**	2910000021	NUT
13	2201320001	AXLE BEAM		**47**	2128280001	PADS
	2201448009	AXLE BEAM, P. STEERING		**48**	2206300003	STEERING SUPPORT
14	2205250001	KING PIN		**49**	2910300002	CASTELLATED NUT
15	2910300001	NUT 3/4-NF		**50**	2121000005	BUSHING, LONG
16	2103250001	THRUST BEARING			2121000006	BUSHING, SHORT
17	2914364001	BUSHING		**51**	2330014	HORN COVER
19	2229300002	OIL SEAL		**52**	2330013	STEERING WHEEL
20	2103300001	TAPER BEARING		**53**	2230014	ADJUSTABLE COLUMN
21	2224300001	HUB		**54**	2330015	UNIVERSAL JOINT
22	2910300003	WHEEL BOLT		**55**	2200224003	SHAFT
23	2103300002	TAPER BEARING		**56**	2200224001	NYLON COUPLER
24	2229300001	DUST CAP		**57**	2200224002	SHAFT
25	481431	RIGHT CALIPER		**58**	4430001	UNIVERSAL JOINT
	481430	LEFT CALIPER		**59**	2910000024	SCREW
26	2134000001	FLEX. HOSE		**60**	2392224001	SELECTOR BOX
27	2120236001	DISC		**61**	2206224001	COLUMN MOUNTING PLATE
28	2916000001	U-BOLT		**62**	2230016	NYLON WASHER
29	2192280001	LEAF SPRINGS		**63**	2230017	NYLON BUSHING
30		NUT 1/2-NF				

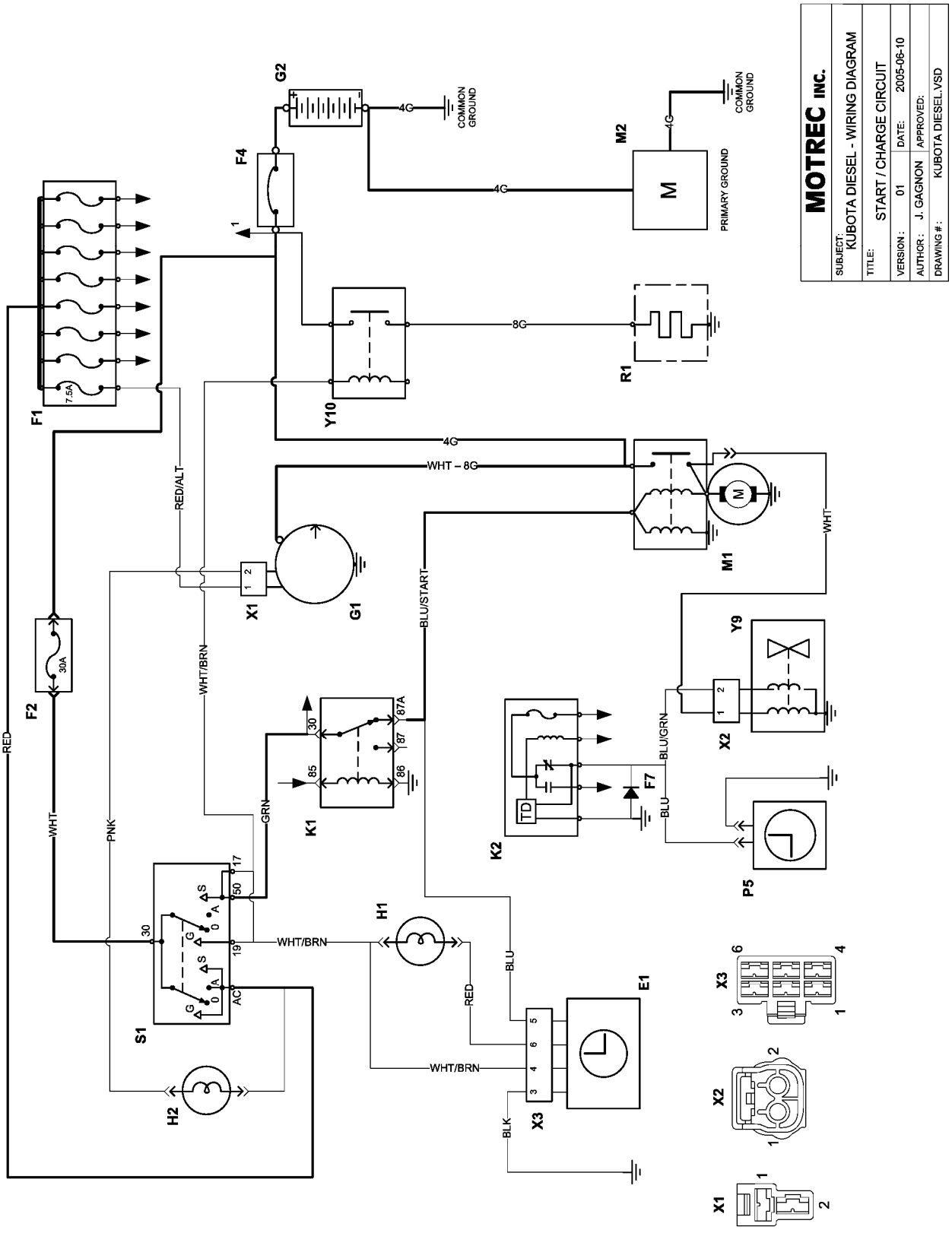
ENGINE MUFFLER & MOUNTING, KUBOTA ENGINE



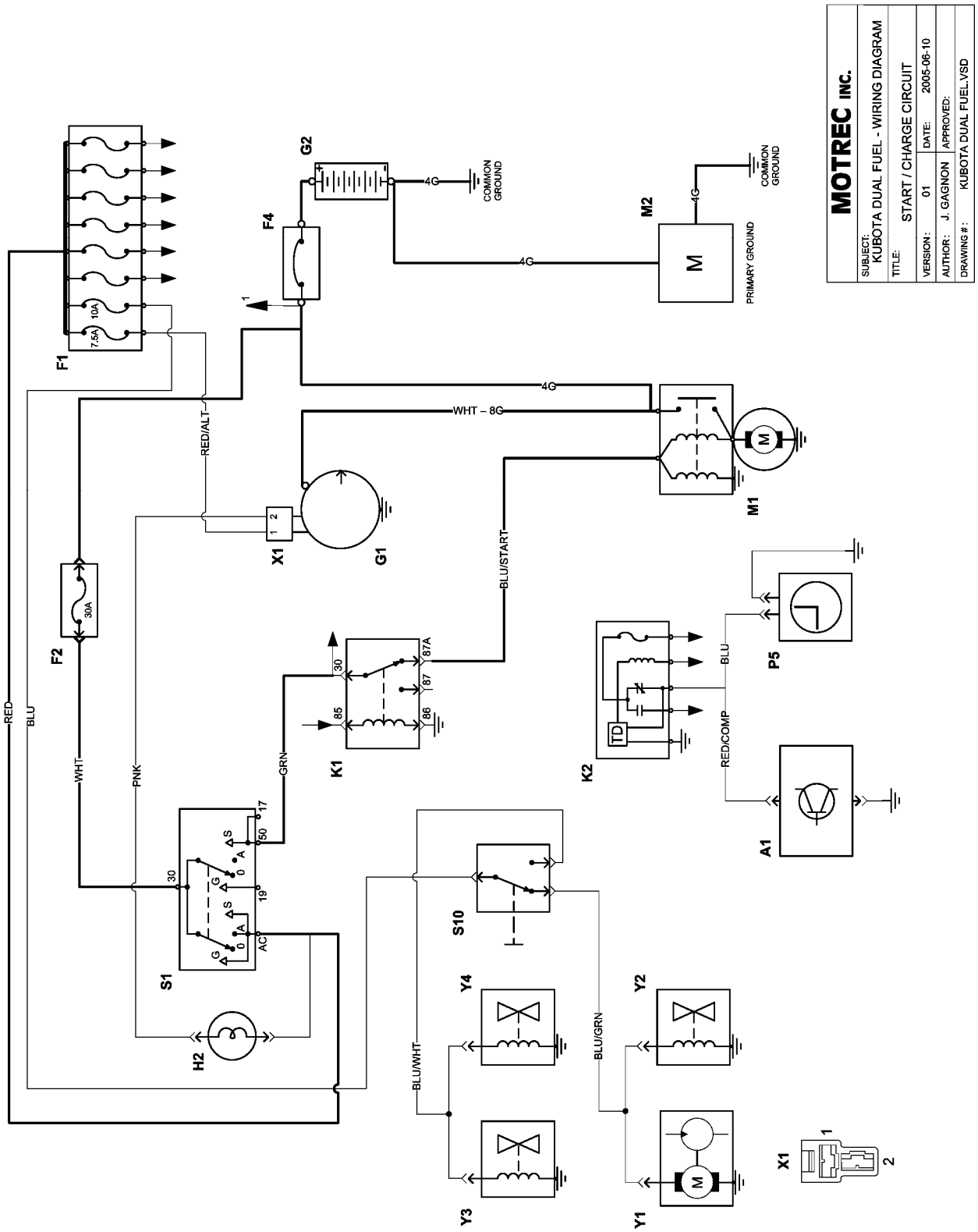
REF	*PART NO*	*DESCRIPTION*
1	2169501036	RADIATOR
	2169449004	RADIATOR SUPPORT
	2169661018	AIR DEFLECTOR – TOP
	2169501027	AIR DEFLECTOR – BOTTOM
	2819449004	RADIATOR GRID
	3129501004	COOLING FAN
	246101	SOLENOID
2	2160501006*	ENGINE SUPPORT – FRONT
3	2160501002	ENGINE SUPPORT – REAR
4	2150449001	KUBOTA DUAL FUEL ENGINE KIT
	2150449002	KUBOTA GAS ENGINE KIT
	2150449003	KUBOTA DIESEL ENGINE KIT
5	2157501011	90° EXHAUST
	2157501012	EXHAUST GASKET
6	2169501030	AIR FILTER SUPPORT
7	2169501039	ADAPTOR – MOTOR / PUMP
	2169501040	PUMP COUPLING
	2169501041	MOTOR COUPLING
8	2157661001	CATALITIC MUFFLER
9	4160322001	HYDROSTATIC PUMP
10	2169501034	AIR CLEANER MOUNTING BAND
11	2169501033	AIR CLEANER
12	2604501002	RESERVE TANK – PRESTONE
13	2169501026	RUBBER MOUNT MUFFLER
14	2169449001	HEAT SHIELD
15	2169449010	MUFFLER HOLDER
16	2913501002	AIR INTAKE FLEXIBLE TUBE
	2169501035	INTAKE – AIR FILTER TUBE
17	2169449005	AIR INTAKE TUBE
18	consult manuf.	ENGINE RUBBER MOUNT

* WITH A/C, SEE ADDENDUM

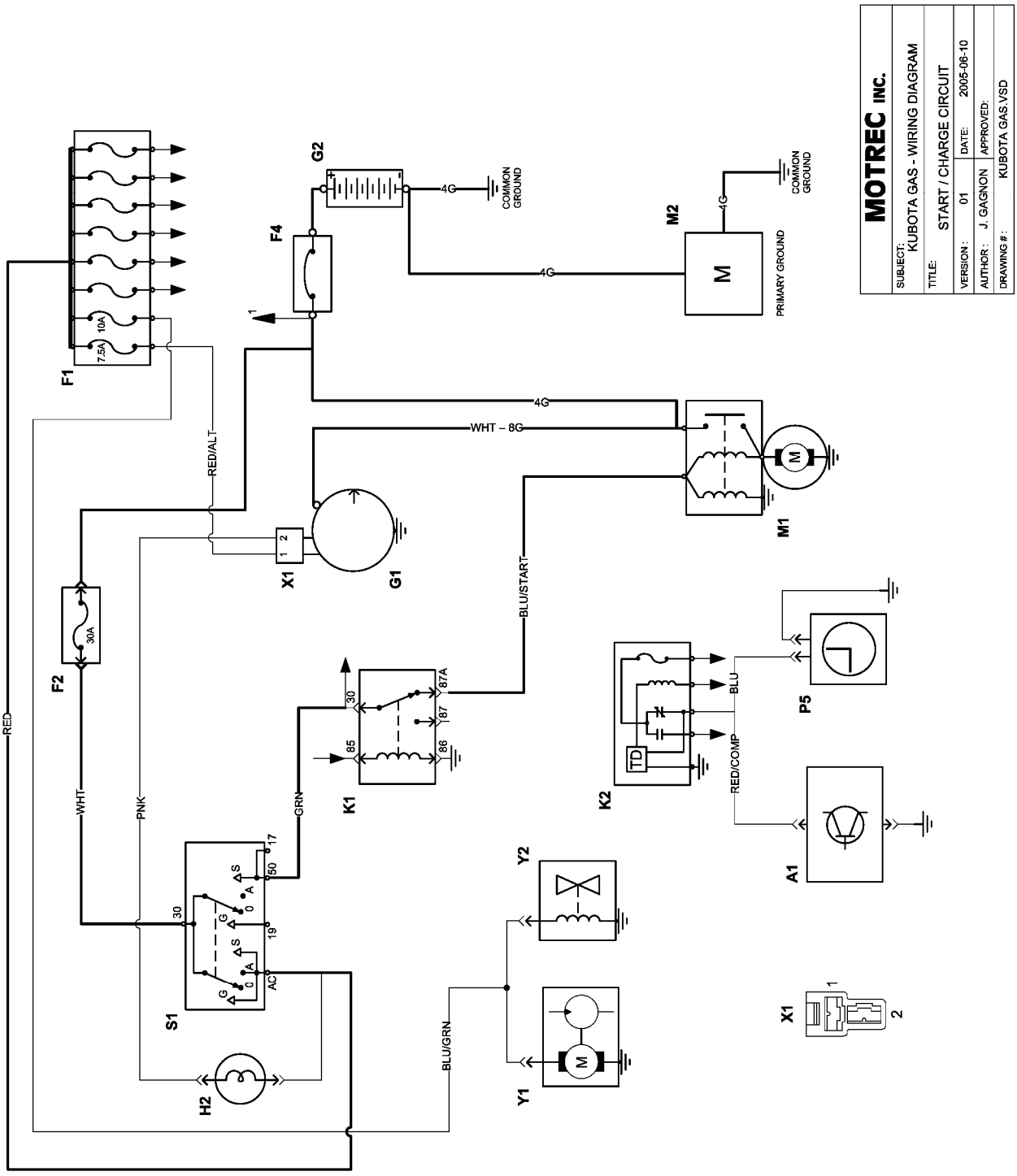
ELECTRICAL DIAGRAM – KUBOTA DIESEL START / CHARGE CIRCUIT



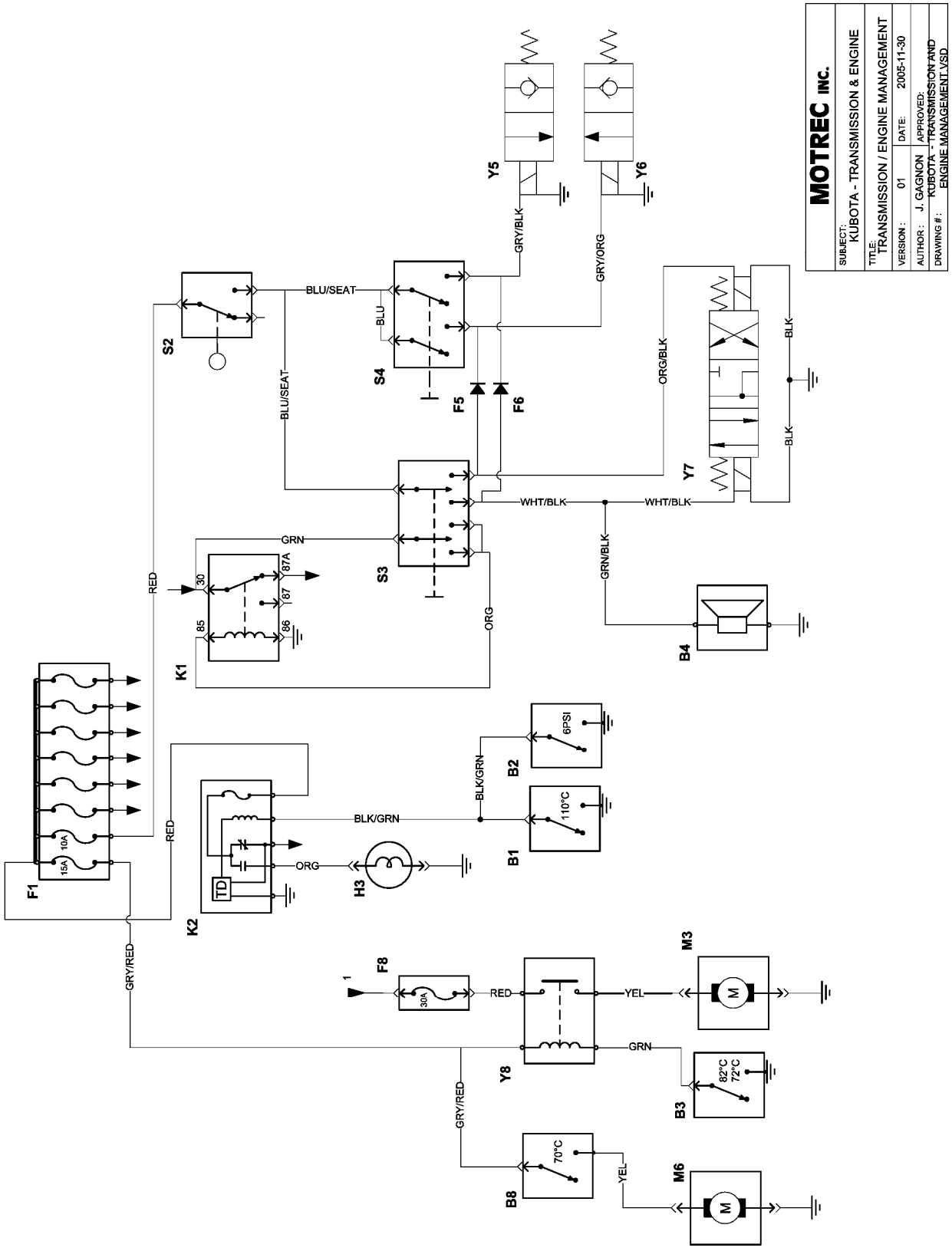
ELECTRICAL DIAGRAM – KUBOTA DUAL FUEL START / CHARGE CIRCUIT



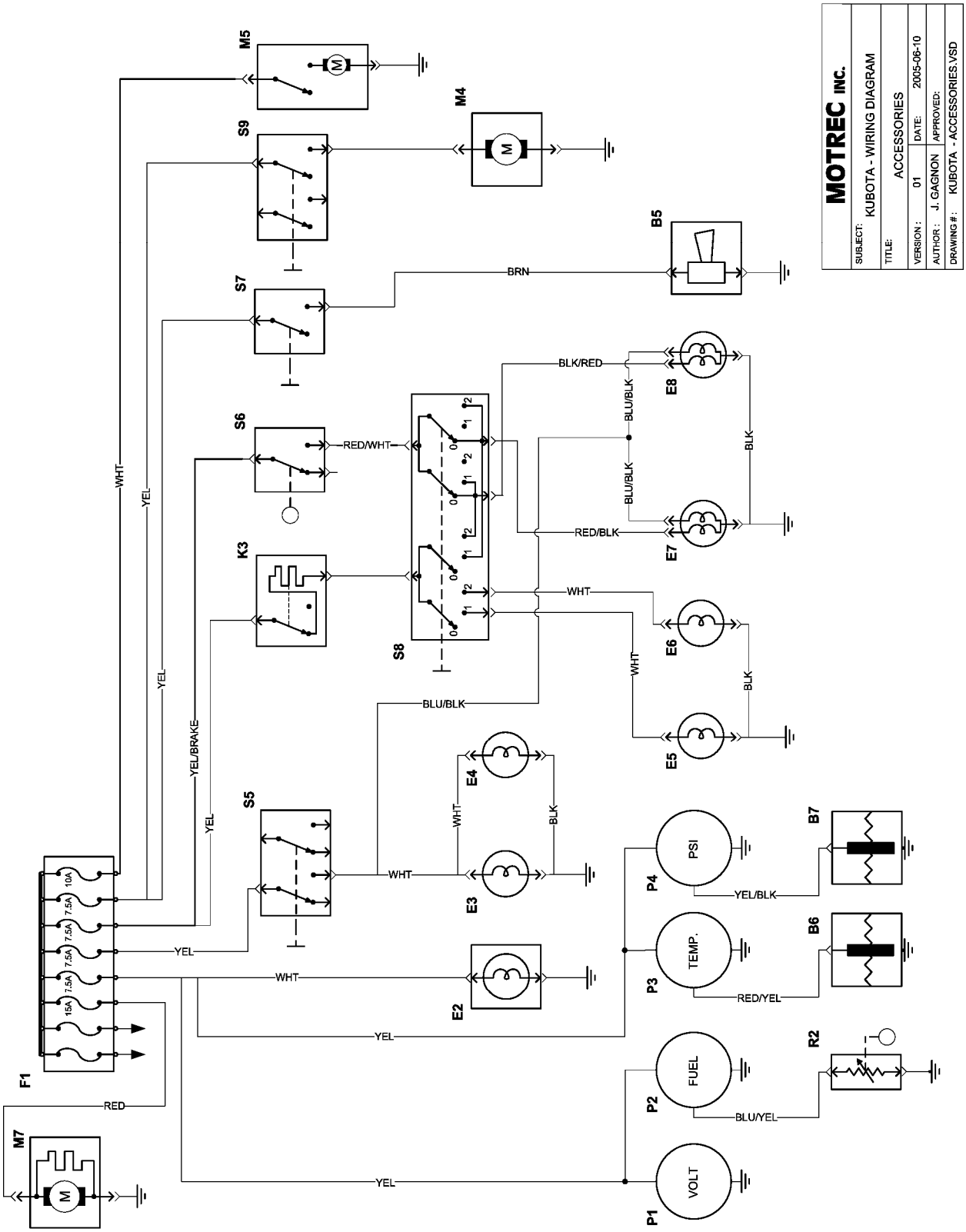
ELECTRICAL DIAGRAM – KUBOTA GAS START / CHARGE CIRCUIT



ELECTRICAL DIAGRAM – KUBOTA TRANSMISSION / ENGINE MANAGEMENT



ELECTRICAL DIAGRAM – KUBOTA ACCESSORIES

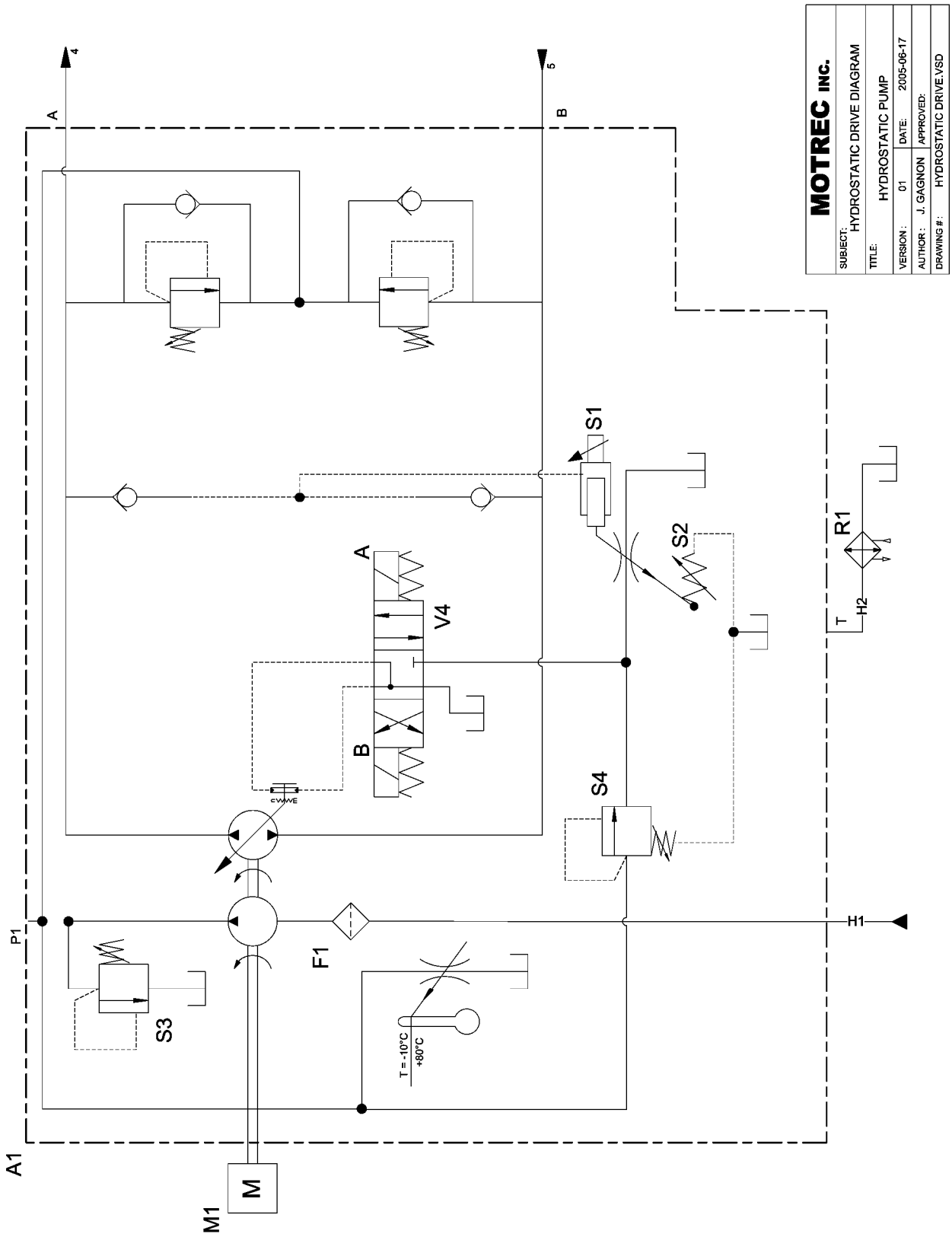


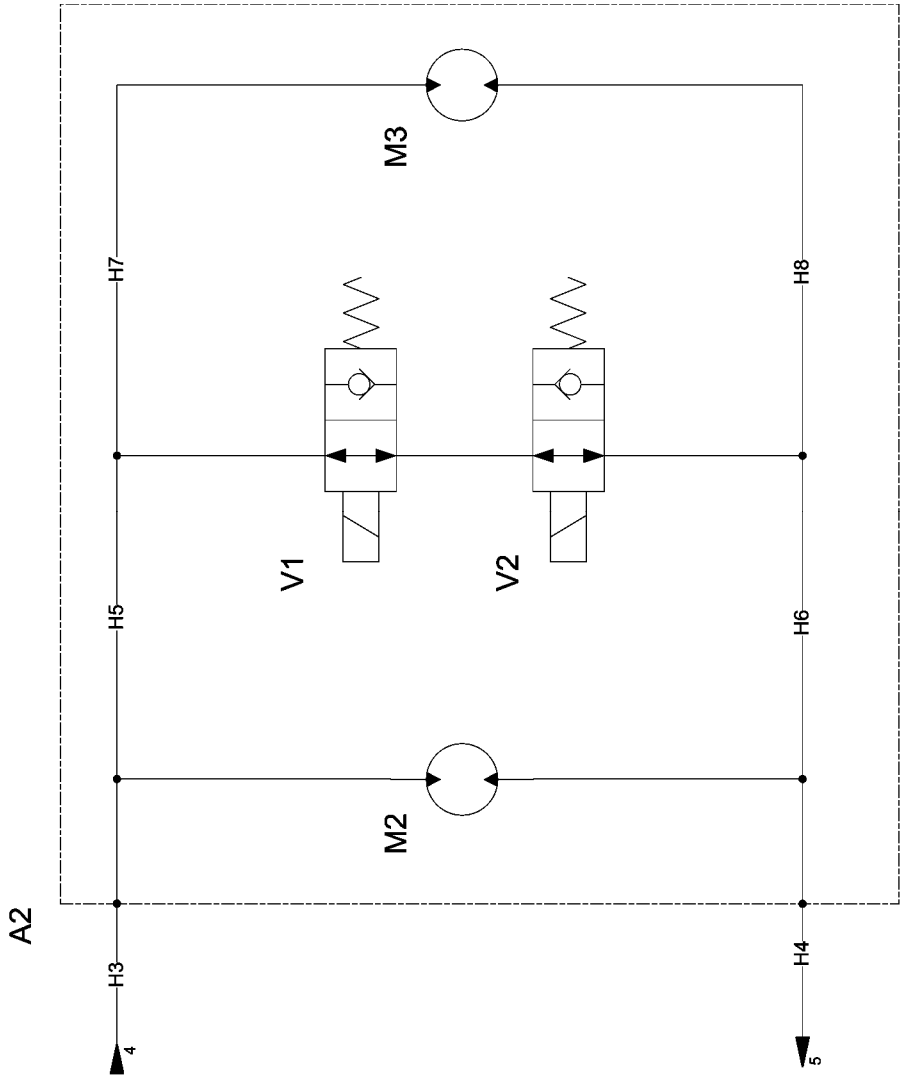
PARTS LIST

NO	DESIGNATION	REF	QTY
A1	ENGINE CONTROLLER	-	1
B1	EMERGENCY TEMPERATURE SWITCH	3109449001	1
B2	EMERGENCY PRESSURE SWITCH	3109501001	1
B3	THERMOSTATIC SWITCH, RADIATOR	3109501004	1
B4	REVERSE ALARM	*	1
B5	HORN	*	1
B6	COOLANT TEMPERATURE SENDER	3108449004	1
B7	OIL PRESSURE SENDER	3108501002	1
B8	THERMOSTATIC SWITCH, OIL COOLER	4190501004	1
E1	GLOW PLUG TIMER	-	1
E2	STROBE LIGHT	*	1
E3-E4	HEAD LAMP	*	2
E5-E6	SIDEMARKER LAMP	*	2
E7-E8	TAIL/BRAKE LIGHT	*	2
F1	AGC FUSE HOLDER	5069005	1
F2-F3	IN-LINE FUSE HOLDER	3118321006	2
F4	CIRCUIT BREAKER	3107000001	1
F5-F7	DIODE	367012	2
F8	MAXI FUSE HOLDER	3118501006	1
	MAXI BLADE FUSE 30A	3118501005	1
G1	ALTERNATOR	-	1
G2	BATTERY	-	1
H1	GLOW PLUG LAMP	-	1
H2	CHARGE LAMP	246212	1
H3	EMERGENCY LAMP	246212	1
K1	RELAY 12V, F/R INTERRUPT	3069010	1
K2	TIMER DELAY SW., SHUT DOWN	3129449001	1
K3	FLASHER RELAY	3064004	1
M1	STARTER	-	1
M2	ENGINE	-	1
M3	RADIATOR FAN	3129501004	1
M4	CAB HEATER FAN	6690002	1
M5	WIPER MOTOR	*	1
M6	OIL COOLER FAN	-	1
M7	CAB HEATER	*	1
P1	VOLTMETER	3069007	1
P2	FUEL GAUGE	686203	1
P3	TEMPERATURE GAUGE	3108449003	1
P4	OIL PRESSURE GAUGE	3108501003	1
P5	HOUR METER	3069008	1
R1	GLOW PLUGS	-	1
R2	FUEL SENDER	686207	1
S1	IGNITION SWITCH		1
	FOR GAS / DUAL FUEL ENGINE	3109449002	1
	FOR DIESEL ENGINE	3109501005	1
S2	SEAT SWITCH	3109000003	1

S3	FORWARD/REVERSE SELECTOR	266211	1
S4	FREEWHEEL SWITCH	55017	1
S5	HEADLIGHT SWITCH	1269004	1
S6	HORN BUTTON	*	1
S7	BRAKE SWITCH	246207	1
S8	TURN SIGNAL SWITCH	246050	1
S9	CAB HEATER SWITCH	55017	1
S10	FUEL SELECTION MODE	5069003	1
Y1	FUEL PUMP	-	1
Y2	CARBURATOR FUEL VALVE	-	1
Y3	CARBURATOR LPG VALVE	-	1
Y4	LPG SHUT-OFF VALVE	-	1
Y5-Y6	FREEWHEEL VALVE	SV16-23	2
	FREEWHEEL BLOCK KIT	4110501003	1
Y7	HYDRAUSTATIC DISTRIBUTOR	-	1
Y8	COOLING FAN SOLENOID	246101	2
Y9	DIESEL SOLENOID VALVE (ENGINE)	-	1
Y10	GLOW PLUG SOLENOID	246101	1
X1	ALTERNATOR CONNECTOR	-	1
X2	FUEL VALVE CONNECTOR	-	1
X3	GLOW PLUG TIMER CONNECTOR	-	1

HYDRAULIC DIAGRAM





MOTREC INC.			
SUBJECT:	HYDROSTATIC DRIVE DIAGRAM		
TITLE:	FREEWHEEL MANIFOLD		
VERSION :	01	DATE:	2005-06-17
AUTHOR :	J. GAGNON	APPROVED:	
DRAWING # :	HYDROSTATIC DRIVE.VSD		

PARTS LIST

NO	DESIGNATION	REF	QTY
A1	HYDROSTATIC PUMP	5070014	1
A2	FREEWHEEL MANIFOLD	4110501003	1
R1	OIL COOLER	4190501003	1
S1	MACHINE START-UP ADJ. SCREW		
S2	POWER LIMITER ADJ. SCREW		
S3	CHARGE PRESSURE ADJ. SCREW		
S4	MIN. CHARGE PRESSURE ADJ. SCREW		
V1-V2	FREEWHEEL SOLENOID	SV16-23	2
V4	HYDROSTATIC VALVE		
M2-M3	HYDRAULIC MOTOR	Contact manuf.	2
M1	ENGINE	-	1

MOTREC ILLUSTRATED ACCESSORIES

Strobelight, polemount
Amber 12-80V: 3116000001
Red 12-80V: 2469001
Blue 12-80V: 3690008

Strobelight, cab mount
Amber 12-48V: 3116250001
Red 12-48V: 3069026
Blue 12-48V: 3069014
Amber 72-80V:3116720001
Red 72-80V: 3116720002
Blue 72-80V: 3116720003

Amber turn lamp
12V: 3069020
Bulb 12V: 3069021
Multi-LED amber turn lamp
Round Light: 3111000010
Grommet: 3111000008
Plug: 3111000009

Red Tail/Brake light
Grommet: 3269001
Plug: 246012A
12V : 2469021
24V : 2469022

Red Tail/Brake light
Housing: 3069012R
Bulb 12V: 3117240001

Back-up lamp
Grommet: 3269001
12V: 3669012
24V: 3669012A

Clear lamp
12V: 3069012
Bulb 12V: 1269008

Pedestral head lamp
12V: 2569001
Bulb 12V: 2569001B
Bulb 24V: 4469001

Headlight
Left: 3111480003
Right: 3111480004
Bulb H/L: 3111480006
Bulb Turn: 3111480008
Bulb Mark: 3111480007

Headlight
Left: 3111480003
Right: 3111480004
Bulb H/L: 3117480001
Bulb Turn: 3117480003
Bulb Mark: 3117480002

Turn signal switch
246050

Multi-LED Red Tail/Brake
Light: 3111000006
Grommet: 3111000008
Plug: 3119000009

Multi-LED Back-up
Light: 3111000007
Strobe light: 3111000013
Grommet: 3111000008
Plug: 3119000009

Red Tail/Brake light
12V: 386002

Horn button VIP
2330014

Horn button, column mount
246210

Horn button, dash mount
266210

Horn button 3109250001

Limit switch
3030015

Horn
12V: 246003
24V: 246013

Analog Voltmeter
12V : 3069007
24V : 2469002
36-48V : 3669002

HOBBS Gauge
24V: 2469026
36V: 3069038
48V: 4869037

DC-DC converter, 10A
12-48V: 3069019

DC-DC Converter, 25A
12-48V: 3124000002
72-80V: 3124880001

Wiper motor
12V: 3113000001
24V: 486211

Wiper arm 2800000001

Wiper blade
14” Blade: 2800000002
18” Blade: 2800000003

Pantograph wiper arm
246233A

Pantograph wiper blade
246233

Cab heater
12V: 3103300001
36V: 3669008
48V: 4869020

12V Dome light 3669006

12V Fan 3669013

Headlamp 12V:3111250002

Headlamp
12V: 3111300001
Bulb 12V: 3111300002

Red Pilot light
12V: 246212
Bulb 12V: 246212B

Back-up alarm or
Motion beeper
12-48V : 3100000001
72-80V : 3105720001
12-24V Adjustable:
3100000002